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Pseudhymenolepis nepalensis sp. nov. (Cestoda:Hymenolepididae) Parasitic on the House Shrew, *Suncus murinus* (Soricidae), from Nepal

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ABSTRACT—*Pseudhymenolepis nepalensis* sp. nov. is described from Nepali house shrew, *Suncus murinus*. This new species closely resembles *P. redonica*, *P. eburnea eburnea* and *P. eburnea ebriensis* in the number and length of the rostellar hook. However, it differs from them in the shape of the rostellar hook. Furthermore, it is related to but differs from *P. graeca* in the shape of the rostellar hook.

INTRODUCTION

While making a study of the helminth parasites of the house shrew, *Suncus murinus* (Linnaeus, 1766) from Kathmandu, Nepal, it is clear that hymenolepidid cestode obtained is considered an underscribed species of *Pseudhymenolepis*. This is the first record of the cestode from the shrew of Nepal.

MATERIALS AND METHODS

The shrews were autopsied immediately after capture at the collecting sites and their guts were fixed in Carnoy's fluid, and brought to Japan. At the laboratory, after soaked in 45% acetic acid for about three hr for expanding, the guts were cut open in 70% ethanol. Tapeworms gathered up from the guts were stored in 70% ethanol. The scoleces, eggs and a part of mature and gravid segments were unstained and observed under an interference contrast light microscope. The mature segments were stained with ethanol-hydrochloride-carmine, dehydrated in graded series of ethanol, cleared in xylene, and mounted in Canada balsam. Measurements are given in millimeters.

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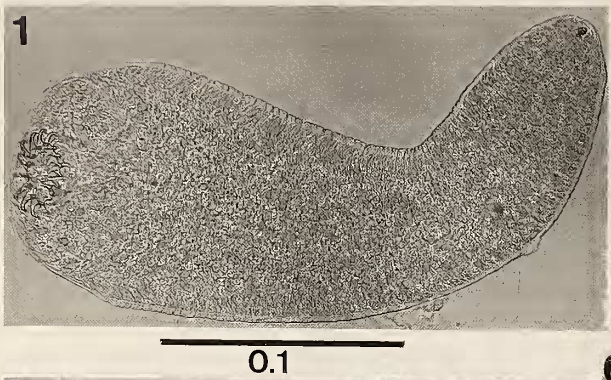
Pseudhymenolepis Joyeux et Baer, 1935
Pseudhymenolepis nepalensis sp. nov.
(Figs. 1–11)

On December 27, 1989, two house shrews, *Suncus murinus* (Linnaeus, 1766) were captured by trap at Kathmandu (1350 m above sea level), Nepal. On investigation, five small strobiae carrying scoleces armed with rostellar hooks, a number of detached immature, mature and gravid segments were collected from guts of two *Suncus murinus*.

Description: Very small strobila carrying scolex, 0.35–0.41 long and 0.14–0.15 wide. Scolex well developed, 0.137–0.168 long and 0.105–0.112 wide. Rostellum well developed, 0.070 long and 0.049 wide, armed with a crown of 15 hooks measuring 0.025 long. Hook handle reduced, blade and guard about equal in length; blade developed, sharp at its end and strongly curved towards guard; guard prominent and single, round at its end and slightly curved. Rostellar sac elongated, 0.088 long and 0.064 wide, extending beyond posterior margin of sucker. Sucker discoid, 0.137 long and 0.105–0.112 wide. Body stongly hyperapolytic, segments detaching themselves before appearence of genital organs. Detached immature strobila, indistincly segmented, consisting of 5–7 segments, 0.7–0.8 long and 0.1–0.12 wide, genital organ undeveloped. Mature segment pyriform, 0.48–1.5 long and 0.27–0.60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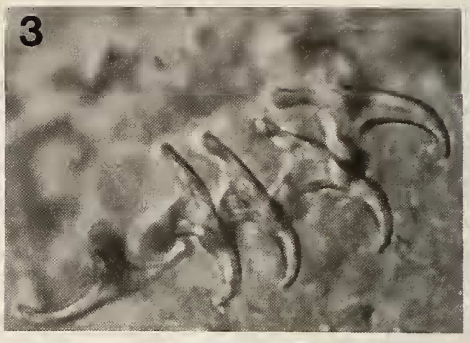
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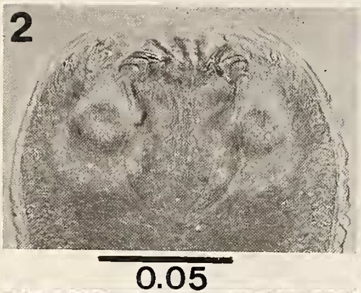
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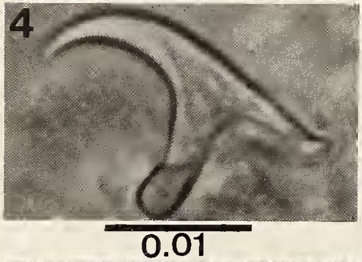
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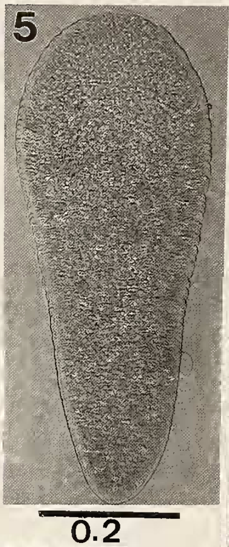
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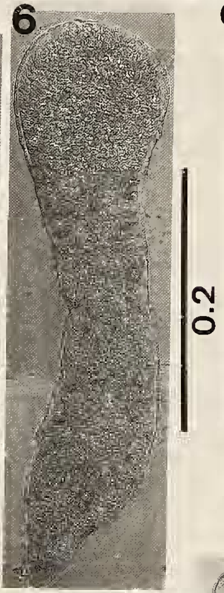
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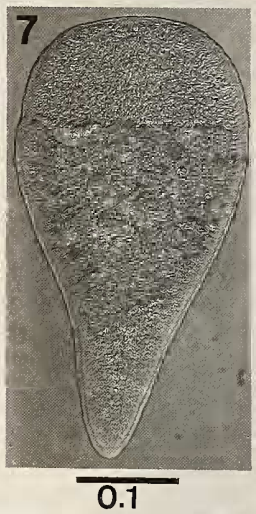
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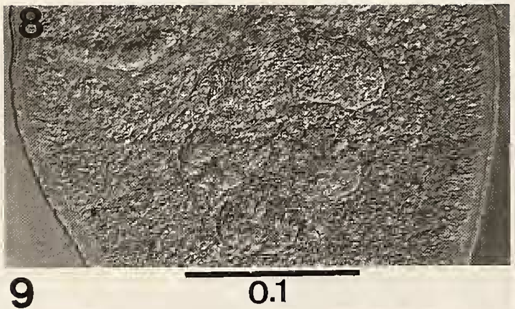
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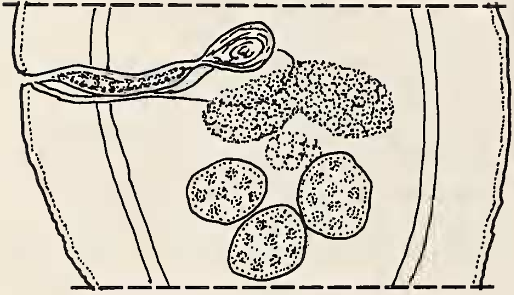
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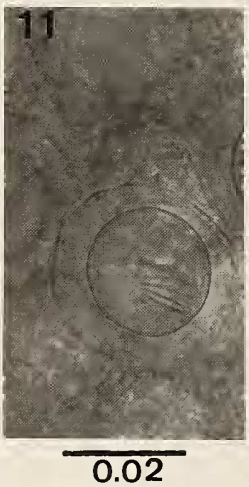
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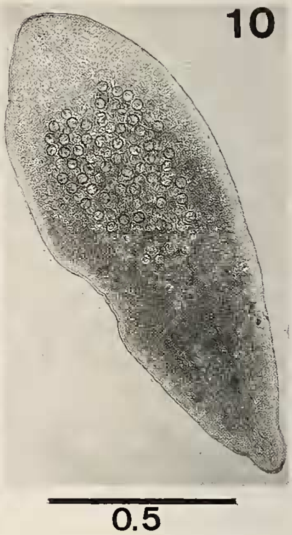
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wide.

Genital pores unilateral, located anterior to middle of segment margin. Cirrus sac cylindrical, 0.091–0.112 long and 0.014–0.025 wide, extending beyond longitudinal excretory canals. Internal seminal vesicle 0.046–0.049 long and 0.011–0.014 wide, occupying most of cirrus sac and connecting to external seminal vesicle by a narrow duct. External seminal vesicle oval, measuring 0.025–0.035 long and 0.014–0.021 wide. Vagina opening in genital atrium ventral to orifice of male duct, extending to median field, posterior to cirrus sac, then enlarging and forming seminal receptacle. Seminal receptacle 0.035–0.042 long and 0.014–0.021 wide. Ovary bilobed, 0.088–0.105 in transverse diameter. Vitelline gland compact, 0.035 long and 0.021–0.028 wide, posterior to ovary. Testes three in number, spherical or oval, 0.049–0.056 by 0.032–0.042, arranged triangulary, one poral and two antiporal. Gravid segment fusiform, 1.3–1.8 long and 0.5–0.7 wide wide. Uterus breaking down into egg-bearing capsules, each with a single egg and filling entire medullary parenchyma. Egg spherical to oval, 0.042–0.046 by 0.046; embryophore 0.028 in diameter; onchosphere spherical, 0.025 in diameter; embryonic hook 0.018 long.

Type host: *Suncus murinus* (Linneaus, 1766).

Site of infection: Small intestine.

Locality and date: Kathmandu, Nepal; December 27, 1989.

Type specimen: Holotype: NSU Lab. Coll. No. 9106: Paratype No. 9107.

Remarks: At the present time, the eight species of the genus *Pseudhymenolepis* Joyeux et Bear, 1935 are described from shrews; *P. redonica* Joyeux et Baer, 1935 from *Crocidura russula, C. leucodon* and *Sorex araneus* [1, 2], *P. papillosa* Hunkeler, 1970 from *C. flavescens spurrelli* [3], *P. eburnea eburnea* Hunkeler, 1970 from *C. therease, C. poensis pamela* and *C. flavescens spurrelli* [3, 4], *P. eisenbergi* Crusz and Sanmugasunderam, 1971 from *Suncus murinus montanus* [5], *P. eburnea ebriensis* Hunkeler, 1972 from *C. jouvenatae ebrienis* [4, 6], *P. suncusi* Gupta and Sinha, 1984 from *Suncus striatus* [7], *P. graeca* Vaucher, 1984 from *Crocidura suaveolens* [8] and *P. quptai* Gupta and Singh, 1987 from *S. striatus* [9].

It is extremely doutful from the viewpoint of hyperapolysis that *P. eisenbergi, P. suncusi* and *P. quptai* belong to the genus *Pseudhymenolepis*. The present new species entirely differs from *P. papillosa* in the shape, number and length of the rostellar hooks. Furthermore, it differs from *P. graeca* in the shape of the rostellar hook. This new species closely resembles *P. redonica, P. eburnea eburnea, P. eburnea ebriensis* in the number and length of the rostellar hook. However, it differs from them in the shape of the rostellar hooks (single guard vs. slightly bifid guard).

All the five species except *P. eisenbergi, P. suncusi* and *P. quptai,* not considered to belong to the genus *Pseudhymenolepis,* are described from shrews collected at Europe (France and Greece) and Africa (Ivory Coast and Burkina). According to these shrew's cestode fauna, it is thought that the shrew of Nepale may have systematic connection with the shrew inhabiting Europe and Africa.

ACKNOWLEDGMENTS

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Figs. 1–11. *Pseudhymenolepis nepalensis* sp. nov. 1: Small strobila carrying scolex armed with rostellar hooks. 2: Rostellum. 3: Rostellar hooks. 4: Rostellar hook magnified. 5: Early immature strobila just after detaching, segmentation indistinct. 6: Late immature strobila consisting of 5–6 segments. 7: Mature segment. 8: Genitalia in mature segment. 9: Mature segment drawn from projected photographic negative. 9: Gravid segment. 11: Ripe egg.

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